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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,437	03/12/2004	Hiroyuki Tanaka	250370US2	5272

22850 7590 05/12/2011

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ART UNIT	PAPER NUMBER
2625	

NOTIFICATION DATE	DELIVERY MODE
05/12/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/798,437	TANAKA ET AL.	
	Examiner	Art Unit	
	AKWASI M. SARPONG	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03/14/2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-21,23-29 and 43-57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-21,23-29 and 43-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/14/2011 has been entered.

Response to Amendment

2. Applicant's amendment was received on 02/12/2011 and has been entered and made of record. Currently Claims 1-7, 9-21, 23-28, 43-52, and 54-57 are pending while Claims 8, 22, 29-42 and 53 are cancelled.

Response to Arguments

3. Applicant's arguments with respect to claim 02/10/2011 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The recitation of "computer readable medium" storing a computer program in claims 43-52 and 54-56 does not limit the scope of the claim to statutory subject matter. Broadly and reasonably interpreted, the limitation "Computer readable medium" includes non-transitory medium such as computer hard driver as well as transitory medium such as signal.

A "signal" embodying functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

Because the full scope of the claim as broadly interpreted in light of the disclosure encompasses non-statutory subject matter, the claim as a whole is non-statutory. The examiner suggests narrowing the scope of the claim to include the disclosed non-transitory computer readable medium, while at the same time excluding the transitory medium (i.e., by appending the term "non-transitory" in front of the "computer readable medium"). Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 7, 9-18, 21, 23-28, 43-46, 49, 51-52, 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moffatt (20030214664) in view of Jeoung (20010003097) .

Claim 1, Moffatt discloses an image forming apparatus (Printer shown in Fig. 2) that can include a plurality of application programs that are usable on the image forming apparatus (Section 0014- thus the printer can encompasses any device that has a printing function such as facsimile and printing) and that include at least one of a copy application program, a printer application program, and a FAX application program, (Section 0014, lines 3-6- thus the printer can include printer application as well as facsimile application program as well) the image forming apparatus comprising:

a displaying part (touch sensitive display- Section 0022, lines 1-2) configured to display a screen used for selecting an application program on an operation display part of the image forming apparatus (Section 0022, thus the input device 125 such as the liquid crystal display enable a printer user or operator to input commands that can be used for selecting or recording of function such as printing or faxing- please see Section 0029, lines 2-5) and

an assigning part (Functional sequence input –section 1-3) configured to assign a selected application program that is selected on the screen to a function key when the function key is pushed, (Section 0029, lines 1-11 – thus a certain key is assigned or programmed by holding down the function key or by selecting the record key and by entering the recorded functions) such that the selected

application program is executed when the function key is later pushed after assigning of the selected application program has occurred. (Section 0035- thus after the clear key has been assigned a function and the function has been stored in memory, when the key is activated or pressed the assigned and stored function is accessed and performed or executed)

a control part configured to launch the application program assigned to the function key when the function key is pushed. **(Section 0035- thus the controller 100 that controls the whole printer controls accessing the assigned and stored function to be performed or executed when the key is activated or pressed).**

a determination part configured to determine whether the function key is assigned a plurality of application programs or a single application program. **(Section 0030, lines 3-9 –thus the printer controller determines if the assigned and stored function is a single or sequence (Plurality) of functions when the function is read out of the memory to performed)**

if the determination part determines that a plurality of application programs are assigned to the function key and when the function key is pushed, (**Section 0030, lines 3-6- thus " the assigned functionality may be a single or sequence of functions" – this means that when the controller reads the stored functions from memory it will determines if it is a sequence of functions)** the control part is configured to perform the selecting of application program from among the plurality of application programs assigned to the function key, and launches an application selected on the selection screen.

(Section 0035- thus the controller 100 that controls the whole printer controls accessing the assigned and stored functions from memory to perform or execute when the key is activated or pressed).

and if the determination part determines that a single application. is assigned to the function key, the control part launches the single application without displaying the selection screen when the function key is pushed. **(Section 0030, lines 3-6 since the stored and assigned function can also be a single function, a single function will be accessed and performed if it is determined that the assigned and stored function is single).**

Moffatt is silent about if the sequence of functions which are assigned and stored are displayed before the functions are performed and if the control part is configured to display and perform a selection screen on the operation panel.

Jeoung discloses displaying a sub menu items corresponding to the selected item No. 7 from the main menu items. **(Section 0023- thus after the user selects the item, it is selected and performed)**. Since both Moffatt (Section 0029, lines 1-11 – thus a certain key is assigned or programmed by holding down the function key or by selecting the record key and by entering the recorded functions) and Jeoung (Section 0026, lines 1-3- a single hot key maybe assigned) discloses assigning function keys to plurality of functions as well as single functions, it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 in the printer taught by Moffatt to include the teaching of displaying before performing the sequence of function as taught by Jeoung (display the sub menu items) so that the user can see and

confirm the sequence of functions before it is performed. The motivation is that it will avoid making errors in printing the print data.

(NB: hence after the modification if a key pushed has a single function (that means no sub menu to a key), obviously there will not be any display of sub menu. For example if 1 is selected from the menu shown in Fig. 3a in Jeoung the function "voice mail" is executed without displaying any further menu or functions to be selected.)

Claim 2, Moffat in view of Jeoung discloses wherein the function key is a hardware key. **(Moffatt: Section 0022: lines 1-2- thus the input device can be a keypad (hardware key))**

Claim 3, Moffat in view of Jeoung discloses wherein the function key is a software key that is displayed on the operation display part of the image forming apparatus. **(Moffatt: Section 0022: lines 1-2- thus the input device can be a touch sensitive display)**

Claim 4, Moffat in view of Jeoung discloses wherein assigning by the assigning part is performed when the image forming apparatus is in a mode for assigning the selected application program to the function key. **(Moffatt: Section 0029, lines 12-15- thus the record key is pressed to take the printer into recording session by choosing to initiate the recording session)**

Claim 7, Moffat in view of Jeoung discloses wherein, when assigning of the selected application program is performed, **(Moffat: Section 0030, lines 1-3- thus the sequence of functions are entered by the user using the key function key input)** the image forming apparatus displays a screen indicating the number of applications programs assigned to the function key. **(Jeoung: the number of items for the sub menu (application programs or functions) are indicated on the screen as clearly shown in Fig. 3- please see motivation for claim one since they are the same).**

Claim 8 (Canceled).

Claim 9, Moffat in view of Jeoung discloses the assigning part including a part obtaining a function key ID corresponding to the pushed function key; **(Moffat: Section 0035 lines 1-6- thus address in the memory reads on the function key ID since the ID identifies the functional key sequence in the memory)** and a part storing an application program ID of the selected application program and the obtained function key ID in which the application program ID is associated with the function key ID. **(Moffat: Section 0035, lines 1-5- thus the addresses are used as pointers or used to associate the functional key sequence in the printer memory).**

Claim 10, Moffatt in view of Jeoung discloses wherein in addition to the function key ID, the image forming apparatus stores extension key IDs for identifying a plurality of application programs assigned to the function key. **(Moffatt: Section 0035, lines 10-11- "address pointer that points to the**

sequence"- therefore the address pointers reads on the extension key ID that identifies the sequence in the printer memory).

Claim 11, Moffat in view of Jeoung discloses wherein when a function key to which a plurality of application programs are assigned is pushed, (**Section 0030, lines 3-6- thus " the assigned functionality may be a single or sequence of functions" – this means that when the controller reads the stored functions from memory it will determines if it is a sequence of functions or a single function)** the image forming apparatus displays a screen including the names of the plurality of application programs for a user to select one application program from the plurality of application programs. **(Jeoung: Section 0023- thus after the user selects an item displayed on the screen, the selected function is performed by the controller please see motivation for claim 1 since they are the same).**

Claim 12, Moffat does not disclose wherein the image forming apparatus displays application program status for each of the plurality of applications application programs.

However Jeoung discloses wherein the operational state of the mobile phone **(image forming apparatus because it can send an image data to be printed)** can be displayed on an LCD screen (Section 0020, lines 6-8). Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify to controller 100 with the control unit 10 so that the status or state of the programs will be known by the user. The motivation is that it will

inform the user of any errors that has happened so that the user can correct them as early as possible.

Claim 13, Moffat does not disclose wherein the image forming apparatus selects one application program from a plurality of application programs according to a number of times a user pushes a function key to which the plurality of application programs are assigned within a time period.

Jeoung discloses wherein the image forming apparatus selects one application program from a plurality of application programs **(Section 0026, lines 3-4- a user can select one menu from a plurality of menus or program)** according to a number of times a user pushes a function key to which the plurality of application programs are assigned within a time period. **(Section 0024, Fig. 4b obviously the down key is pushed 3 times that means the function calculator is selected)**. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying an arrow button or navigating button that can be used to navigate through the sequence functions so that a third function can be selected by pushing the button three times. The motivation is that it will make it easier for user to select a function out of a plurality of functions.

Claim 14, Moffatt does not discloses wherein the image forming apparatus selects one application program from a plurality of application

programs in which the one application program corresponds to an extension key ID that is the same as a number of times a user pushes the function key to which the plurality of applications application programs are assigned within a time period.

Jeoung discloses wherein the mobile phone (image forming apparatus because it can send an image data to be printed) can be used to select a function (application program) from a plurality of application programs **(Section 0022, lines 3-4- thus one item from main menu list (plurality) is selected)** in which the one application program corresponds to an extension key ID **("1" for scheduler, "2" for "to do list" and "3" for calculator as clearly shown in Fig. 4b)** that is the same as a number of times a user pushes the function key to which the plurality of applications application programs are assigned within a time period. **(Section 0024, lines 12-14- wherein the number representing the function reads on the extension key ID as the number shown in Fig. 4b as ("1" for scheduler, "2" for "to do list" and "3" for calculator)).**

Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of inputting a number that corresponds to a function so that a function can be selected by just inputting a number. The motivation is that it will make it easier for user to select a function out of a plurality of functions.

Claim 15, Moffatt discloses a method used for assigning an application program to a function key in an image forming apparatus (Printer shown in Fig. 2) that can include a plurality of application programs that are usable on the image forming apparatus and that include at least one of a copy application program, a printer application program, and a FAX application program, **(Section 0014- thus the printer can encompasses any device that has a printing function such as facsimile and printing and Fig. 3 shows a step by step method of how sequence of functions are assigned to functions keys)** the method comprising:

displaying a screen used for selecting an application program on an operation display part of the image forming apparatus **(Section 0022, thus the input device 125 such as the liquid crystal display enable a printer user or operator to input commands that can be used for the selection of functions such as printing or faxing that is going to be programmed or assigned- please see Section 0029, lines 2-5)** and

assigning a selected application program that is selected on the screen to a function key when the function key is pushed, **(Section 0029, lines 1-11 – thus a certain key is assigned or programmed by holding down the function key or by selecting the record key and by entering the recorded functions)** such that the selected application program is executed when the function key is later pushed after assigning of the selected application program has occurred. **(Section 0035- thus after the clear key has been assigned a function and the function has been stored in memory, when the key is**

activated or pressed the assigned and stored function is accessed and performed or executed)

determining whether the function key is assigned a plurality of application programs or a single application program. **(Section 0030, lines 3-9 – determining if the assigned and stored function is a single or sequence (Plurality) of functions when the function is read out of the memory to performed)**

if it is determined that a plurality of application programs are assigned to the function key and when the function key is pushed, (**Section 0030, lines 3-6- thus " the assigned functionality may be a single or sequence of functions" – this means that when the controller reads the stored functions from memory it will determines if it is a sequence of functions)**

performing a selection screen on the operation display part, for selecting an application program from among the plurality of application programs assigned to the function key, and launching an application program selected on the selection screen; **(Section 0035- accessing the assigned and stored functions from memory to perform or execute when the key is activated or pressed- for example when a clear key is pushed, the clear program is read and performed or lunched in the printer).**

and

if it is determined that a single application program is assigned to the function key, launching the single application program without displaying the selection screen when the function key is pushed. **(Section 0030, lines 3-6**

since the stored and assigned function can also be a single function, a single function will be accessed and performed if it is determined that the assigned and stored function that is pushed or selected is a single function).

Moffatt is silent about if the sequences of functions which are assigned and stored are displayed before the functions are performed the control part is configured to display/perform a selection screen on the operation panel.

Jeoung discloses displaying a sub menu items corresponding to the selected item No. 7 from the main menu items. **(Section 0023- thus after the user selects the item, it is selected and performed)**. Since both Moffat (Section 0029, lines 1-11 – thus a certain key is assigned or programmed by holding down the function key or by selecting the record key and by entering the recorded functions) and Jeoung (Section 0026, lines 1-3- a single hot key maybe assigned) discloses assigning function keys to plurality of functions as well as single functions, it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 in the printer taught by Moffatt to include the teaching of displaying the sequence of function as taught by Jeoung (display the sub menu items) so that the user can see and confirm the sequence of functions before it is performed. The motivation is that it will avoid making errors in printing the print data.

(NB: hence after the modification if a key pushed has a single function (that means no sub menu to a key), obviously there will not be any display of sub menu. For example if 1 is selected from the menu shown in

Fig. 3a in Jeoung the function "voice mail" is executed without displaying any further menu or functions to be selected.)

Claim 16, Moffat in view of Jeoung discloses wherein the function key is a hardware key. **(Moffatt: Section 0022: lines 1-2- thus the input device can be a keypad (hardware key))**

Claim 17, Moffat in view of Jeoung discloses wherein the function key is a software key that is displayed on the operation display part of the image forming apparatus. **(Moffatt: Section 0022: lines 1-2- thus the input device can be a touch sensitive display)**

Claim 18, Moffat in view of Jeoung discloses wherein the step of assigning is performed when the image forming apparatus is in a mode for assigning the selected application program to the function key. **(Moffatt: Section 0029, lines 12-15- thus the record key is pressed to take the printer into recording session by choosing to initiate the recording session)**

Claim 21, Moffat in view of Jeoung discloses wherein, when assigning of the selected application program is performed, **(Moffat: Section 0030, lines 1-3- thus the sequence of functions are entered by the user using the key function key input)** the image forming apparatus displays a screen indicating the number of applications application programs assigned to the function key. **Jeoung: the number of items for the sub menu (application programs or**

functions) are indicated on the screen as clearly shown in Fig. 3- please see motivation for claim one since they are the same).

Claim 22, (Cancelled)

Claim 23, Moffat in view of Jeoung discloses wherein in the step of assigning, the image forming apparatus obtains a function key ID corresponding to the pushed function key; **(Moffat: Section 0035 lines 1-6- thus address in the memory reads on the function key ID since the ID identifies the functional key sequence in the memory)** and stores an application program ID of the selected application program and the obtained function key ID in which the application program ID is associated with the function key ID. **(Moffat: Section 0035, lines 1-5- thus the addresses are used as pointers or used to associate the functional key sequence in the printer memory).**

Claim 24, Moffat in view of Jeoung discloses wherein, in addition to the function key ID, the image forming apparatus stores extension key IDs for identifying a plurality of applications application programs assigned to the function key. **(Moffatt: Section 0035, lines 10-11- "address pointer that points to the sequence"- therefore the address pointers reads on the extension key ID that identifies the sequence in the printer memory).**

Claim 25, Moffat in view of Jeoung discloses wherein, when a function key to which a plurality of applications application programs are assigned is

pushed, (Moffat: **Section 0030, lines 3-6- thus " the assigned functionality may be a single or sequence of functions" – this means that when the controller reads the stored functions from memory it will determines if it is a sequence of functions or a single function)** the image forming apparatus displays a screen including the names of the plurality of application programs for a user to select one application program from the plurality of applications application programs. **(Jeoung: Section 0023- thus after the user selects an item displayed on the screen, the selected function is performed by the controller** please see motivation for claim 1 since they are the same**).**

Claim 26 Moffat does not disclose wherein the image forming apparatus displays application program status for each of the plurality of applications application programs.

However Jeoung discloses wherein the operational state of the mobile phone **(image forming apparatus because it can send an image data to be printed)** can be displayed on an LCD screen (Section 0020, lines 6-8). Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify to controller 100 with the control unit 10 so that the status or state of the programs will be known by the user. The motivation is that it will inform the user of any errors that has happened so that the user can correct them as early as possible.

Claim 27, Moffat does not disclose wherein the image forming apparatus selects one application program from a plurality of application programs

according to a number of times a user pushes a function key to which the plurality of application programs are assigned within a time period.

Jeoung discloses wherein the image forming apparatus selects one application program from a plurality of application programs **(Section 0026, lines 3-4- a user can select one menu from a plurality of menus or program)** according to a number of times a user pushes a function key to which the plurality of application programs are assigned within a time period. **(Section 0024, Fig. 4b obviously the down key is pushed 3 times that means the function calculator is selected)**. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying an arrow button or navigating button that can be used to navigate through the sequence functions so that a third function can be selected by pushing the button three times. The motivation is that it will make it easier for user to select a function out of a plurality of functions.

Claim 28, Moffatt does not discloses wherein the image forming apparatus selects one application program from a plurality of application programs in which the one application program corresponds to an extension key ID that is the same as a number of times a user pushes the function key to which the plurality of applications application programs are assigned within a time period.

Jeoung discloses wherein the mobile phone (image forming apparatus because it can send an image data to be printed) can be used to select a

function (application program) from a plurality of application programs **(Section 0022, lines 3-4- thus one item from main menu list (plurality) is selected)** in which the one application program corresponds to an extension key ID **("1" for scheduler, "2" for "to do list" and "3" for calculator as clearly shown in Fig. 4b)** that is the same as a number of times a user pushes the function key to which the plurality of applications application programs are assigned within a time period. **(Section 0024, lines 12-14- wherein the number representing the function reads on the extension key ID as the number shown in Fig. 4b as ("1" for scheduler, "2" for "to do list" and "3" for calculator)).**

Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of inputting a number that corresponds to a function so that a function can be selected by just inputting a number. The motivation is that it will make it easier for user to select a function out of a plurality of functions.

Claim 29-42, (Cancelled)

Claim 43, Moffatt discloses a computer readable medium storing a computer program for causing an image forming apparatus **(Printer shown in Fig. 2)** to assign an application program to a function key, in which the image forming apparatus can include a plurality of application programs that are usable on the image forming apparatus and that include at least one of a copy application program, a printer application program, and a FAX application program (**Section 0014- thus the printer can encompasses any device that has a printing function such as facsimile and printing and Fig. 3 shows a**

step by step method of how sequence of functions are assigned to functions keys) the computer program comprising:

displaying a screen used for selecting an application program on an operation display part of the image forming apparatus **(Section 0022, thus the input device 125 such as the liquid crystal display enable a printer user or operator to input commands that can be used for the selection of functions such as printing or faxing that is going to be programmed or assigned- please see Section 0029, lines 2-5)** and

assigning a selected application program that is selected on the screen to a function key when the function key is pushed, **(Section 0029, lines 1-11 – thus a certain key is assigned or programmed by holding down the function key or by selecting the record key and by entering the recorded functions)** such that the selected application program is executed when the function key is later pushed after assigning of the selected application program has occurred. **(Section 0035- thus after the clear key has been assigned a function and the function has been stored in memory, when the key is activated or pressed the assigned and stored function is accessed and performed or executed).**

determining whether the function key is assigned a plurality of application programs or a single application program; **(Section 0030, lines 3-9 – determining if the assigned and stored function is a single or sequence (Plurality) of functions when the function is read out of the memory to performed)**

if it is determined that a plurality of application programs are assigned to the function key and when the function key is pushed, **(Section 0030, lines 3-6- thus " the assigned functionality may be a single or sequence of functions" – this means that when the controller reads the stored functions from memory it will determines if it is a sequence of functions)**

pedrforming a selection screen on the operation display part, for selecting an application program from among the plurality of application programs assigned to the function key, and launching an application program selected on the selection screen **(Section 0035- accessing the assigned and stored functions from memory to perform or execute when the key is activated or pressed- for example when a clear key is pushed, the clear program is read and performed or lunched in the printer).**

and

if it is determined that a single application program is assigned to the function key, launching the single application program without displaying the selection screen when the function key is pushed **(Section 0030, lines 3-6 since the stored and assigned function can also be a single function, a single function will be accessed and performed if it is determined that the assigned and stored function that is pushed or selected is a single function).**

Moffatt is silent about if the sequences of functions which are assigned and stored are displayed before the functions are performed the control part is configured to display/perform a selection screen on the operation panel.

Jeoung discloses displaying a sub menu items corresponding to the selected item No. 7 from the main menu items before they are performed . **(Section 0023- thus after the user selects the item, it is selected and performed).** Since both Moffatt (Section 0029, lines 1-11 – thus a certain key is assigned or programmed by holding down the function key or by selecting the record key and by entering the recorded functions) and Jeoung (Section 0026, lines 1-3- a single hot key maybe assigned) discloses assigning function keys to plurality of functions as well as single functions, it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 in the printer taught by Moffatt to include the teaching of displaying the sequence of function as taught by Jeoung (display the sub menu items) so that the user can see and confirm the sequence of functions before it is performed. The motivation is that it will avoid making errors in printing the print data.

(NB: hence after the modification if a key pushed has a single function (that means no sub menu to a key), obviously there will not be any display of sub menu. For example if 1 is selected from the menu shown in Fig. 3a in Jeoung discloses the function "voice mail" is executed without displaying any further menu or functions to be selected.)

Claim 44, Moffat in view of Jeoung discloses wherein the function key is a hardware key. **(Moffatt: Section 0022: lines 1-2- thus the input device can be a keypad (hardware key))**

Claim 45, Moffat in view of Jeoung discloses wherein the function key is a software key that is displayed on the operation display part of the image forming apparatus. **(Moffatt: Section 0022: lines 1-2- thus the input device can be a touch sensitive display)**

Claim 46, Moffat in view of Jeoung discloses wherein the assigning is performed when the image forming apparatus is in a mode for assigning the selected application program to the function key. **(Moffatt: Section 0029, lines 12-15- thus the record key is pressed to take the printer into recording session by choosing to initiate the recording session)**

Claim 49, Moffat in view of Jeoung discloses wherein, when assigning of the selected application program is performed, **(Moffat: Section 0030, lines 1-3- thus the sequence of functions are entered by the user using the key function key input)** the image forming apparatus displays a screen indicating the number of applications programs assigned to the function key. **(Jeoung: the number of items for the sub menu (application programs or functions) are indicated on the screen as clearly shown in Fig. 3- please see motivation for claim one since they are the same).**

Claim 51, Moffat in view of Jeoung discloses that the computer readable medium further comprising obtaining a function key ID corresponding to the pushed function key **(Moffat: Section 0035 lines 1-6- thus address in the memory reads on the function key ID since the ID identifies the functional key sequence in the memory)** and storing an application program ID of the selected application program and the obtained function key ID in which the application program ID is associated with the function key ID. **(Moffat: Section 0035, lines 1-5- thus the addresses are used as pointers or used to associate the functional key sequence in the printer memory).**

Claim 52, Moffat in view of Jeoung discloses wherein in addition to the function key ID storing extension key IDs for identifying a plurality of application programs assigned to the function key. **(Moffatt: Section 0035, lines 10-11- "address pointer that points to the sequence"- therefore the address pointers reads on the extension key ID that identifies the sequence in the printer memory).**

Claim 53, ---- (Cancelled)

Claim 54, Moffat does not disclose wherein the image forming apparatus displays application program status for each of the plurality of applications application programs.

However Jeoung discloses wherein the operational state of the mobile phone **(image forming apparatus because it can send an image data to be printed)** can be displayed on an LCD screen. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify to controller 100 with the control unit 10 so that the status or state of the programs will be known by the user. The motivation is that it will inform the user of any errors that has happened so that the user can correct them as early as possible.

Claim 55, Moffat does not disclose wherein the image forming apparatus selects one application program from a plurality of application programs according to a number of times a user pushes a function key to which the plurality of application programs are assigned within a time period.

Jeoung discloses wherein the image forming apparatus selects one application program from a plurality of application programs **(Section 0026, lines 3-4- a user can select one menu from a plurality of menus or program)** according to a number of times a user pushes a function key to which the plurality of application programs are assigned within a time period. **(Section 0024, Fig. 4b obviously the down key is pushed 3 times that means the function calculator is selected)**. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying an arrow button or navigating button that can be used to navigate through the sequence functions so that a third function can be selected by pushing the button three times. The motivation

is that it will make it easier for user to select a function out of a plurality of functions.

Claim 56, Moffatt does not discloses wherein the image forming apparatus selects one application program from a plurality of application programs in which the one application program corresponds to an extension key ID that is the same as a number of times a user pushes the function key to which the plurality of applications application programs are assigned within a time period.

Jeoung discloses wherein the mobile phone (image forming apparatus because it can send an image data to be printed) can be used to select a function (application program) from a plurality of application programs **(Section 0022, lines 3-4- thus one item from main menu list (plurality) is selected)** in which the one application program corresponds to an extension key ID **("1" for scheduler, "2" for "to do list" and "3" for calculator as clearly shown in Fig. 4b)** that is the same as a number of times a user pushes the function key to which the plurality of applications application programs are assigned within a time period. **(Section 0024, lines 12-14- wherein the number representing the function reads on the extension key ID as the number shown in Fig. 4b as ("1" for scheduler, "2" for "to do list" and "3" for calculator)).**

Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of inputting a number that corresponds to a function so that a function

can be selected by just inputting a number. The motivation is that it will make it easier for user to select a function out of a plurality of functions.

6. Claims 5-6, 19-20 and 47-48 and 50 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moffatt (20030214664) in view of Jeoung (20010003097) as applied to claims 1, 15 and 43 above, and further in view of Ikegami (6745334) .

Claim 5, Moffat in view of Jeoung does not disclose wherein when assigning of the selected application program is performed the image forming apparatus displays a guidance screen indicating an operation of the function key on the operation display part of the image forming apparatus.

Ikegami discloses wherein when assigning of the selected application program is performed the image forming apparatus displays a guidance screen indicating an operation of the function key on the operation display part of the image forming apparatus. **(Col. 8 lines 1-7- thus when the key 617 is pressed an explanation of the function being set is displayed on the screen).** Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying a guidance when programming a key to a function so that it will be easier for a user to understand how the programming was carried out. The motivation is that it will avoid problems when functions are being assigned to a key.

Claim 6, Moffat in view of Jeoung does not disclose wherein the guidance screen includes an image of an operation panel of the image forming apparatus and an image for guiding a user to the function key.

Ikegami discloses wherein the guidance screen includes an image of an operation panel of the image forming apparatus and an image for guiding a user to the function key. (Col. 8 lines 2-5- thus the guidance display panel 617 reads on the operation panel of the image forming apparatus since it explains the functions of setting or assigning a function to a key). Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying a guidance when programming a key to a function so that it will be easier for a user to understand how the programming was carried out. The motivation is that it will avoid problems when functions are being assigned to a key.

Claim 19, Moffat in view of Jeoung does not disclose wherein when assigning of the selected application program is performed the image forming apparatus displays a guidance screen indicating an operation of the function key on the operation display part of the image forming apparatus.

Ikegami discloses wherein when assigning of the selected application program is performed the image forming apparatus displays a guidance screen indicating an operation of the function key on the operation display part of the image forming apparatus. **(Col. 8 lines 1-7- thus when the key 617 is pressed an explanation of the function being set is displayed on the screen).**

Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying a guidance when programming a key to a function so that it will be easier for a user to understand how the programming was carried out. The motivation is that it will avoid problems when functions are being assigned to a key.

Claim 20, Moffat in view of Jeoung does not disclose wherein the guidance screen includes an image of an operation panel of the image forming apparatus and an image for guiding a user to the function key.

Ikegami discloses wherein the guidance screen includes an image of an operation panel of the image forming apparatus and an image for guiding a user to the function key. **(Col. 8 lines 2-5- thus the guidance display panel 617 reads on the operation panel of the image forming apparatus since it explains the functions of setting or assigning a function to a key).** Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying a guidance when programming a key to a function so that it will be easier for a user to understand how the programming was carried out. The motivation is that it will avoid problems when functions are being assigned to a key.

Claim 47, Moffat in view of Jeoung does not disclose wherein when assigning of the selected application program is performed the image forming apparatus displays a guidance screen indicating an operation of the function key on the operation display part of the image forming apparatus.

Ikegami discloses wherein when assigning of the selected application program is performed the image forming apparatus displays a guidance screen indicating an operation of the function key on the operation display part of the image forming apparatus. **(Col. 8 lines 1-7- thus when the key 617 is pressed an explanation of the function being set is displayed on the screen).** Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying a guidance when programming a key to a function so that it will be easier for a user to understand how the programming was carried out. The motivation is that it will avoid problems when functions are being assigned to a key.

Claim 48, Moffat in view of Jeoung does not disclose wherein the guidance screen includes an image of an operation panel of the image forming apparatus and an image for guiding a user to the function key.

Ikegami discloses wherein the guidance screen includes an image of an operation panel of the image forming apparatus and an image for guiding a user to the function key. **(Col. 8 lines 2-5- thus the guidance display panel 617 reads on the operation panel of the image forming apparatus since it explains the functions of setting or assigning a function to a key)**. Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the controller 100 of Moffatt to include the teaching of displaying a guidance when programming a key to a function so that it will be easier for a

user to understand how the programming was carried out. The motivation is that it will avoid problems when functions are being assigned to a key.

Claim 50, Moffatt in view of Jeoung does not disclose further comprising displaying a screen indicating that the function key cannot be assigned to the selected application program if the number of application programs assigned to the function key already reaches a limit number.

Ikegami discloses displaying a screen **(display panel 620- Col. 8 lines 48-51)** indicating that the function key cannot be assigned to the selected application program if the number of application programs assigned to the function key already reaches a limit number. **(Col. 8 lines 6—65- thus a maximum of two function keys are capable of being set on the application mode setting screen which is display panel 620)** . Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the display 70 as taught by Moffatt in view of Jeoung to include the teaching of including a maximum number so that the function keys will not be overloaded. The motivation is that it will make the controller and memory enough space and it will work faster.

Claim 57, Moffatt in view of Jeoung does not discloses wherein when the function key is pushed for the assigning of the selected application program, the image forming apparatus displays a screen indicating that the function key cannot be assigned to the selected application program if the number of

application programs assigned to the function key already reaches a limit number.

Ikegami discloses displaying a screen **(display panel 620- Col. 8 lines 48-51)** indicating that the function key cannot be assigned to the selected application program if the number of application programs assigned to the function key already reaches a limit number. **(Col. 8 lines 6—65- thus a maximum of two function keys are capable of being set on the application mode setting screen which is display panel 620)** . Therefore it will be obvious to one ordinary skilled in the art at the time the invention was made to modify the display 70 as taught by Moffatt in view of Jeoung to include the teaching of including a maximum number so that the function keys will not be overloaded. The motivation is that it will make the controller and memory enough space and it will work faster.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AKWASI M. SARPONG whose telephone number is (571)270-3438. The examiner can normally be reached on Monday-Friday 8:00am-5:00pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan Park can be reached on 571-272-7409. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Akwasi M Sarpong/
Examiner, Art Unit 2625
05/02/2011